CERTIFICATE OF MAILING OR TRANSMISSION

I certify that this correspondence is being:

[ ] deposited with the U.S. Postal Service with sufficient postage as first-class mail in an envelope addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

[x] transmitted by facsimile to the U.S. Patent and Trademark Office at **(571) 273-8300**

On: _____

By: _____

IN THE UNITED STATES
PATENT AND TRADEMARK OFFICE

Appl. No.	:	10/535,553
Applicants	:	William DONALDSON et al.
Filed	:	18 May 2005
TC/A.U.	:	2816
Examiner	:	Anh Quan TRA
Atty. Docket	:	US020454US

Title: INTEGRATED FLOATING POWER TRANSFER DEVICE WITH ELECTROMAGNETIC EMISSION CONTROL CIRCUIT AND METHOD

APPEAL BRIEF

U.S. Patent and Trademark Office
Customer Window, Mail Stop **Appeal Brief - Patents**
Randolph Building
401 Dulany Street
Alexandria, VA 22314

Sir:

In response to the Office Action dated 19 January 2007, finally rejecting pending claims 1-20, and in support of the Notice of Appeal filed on 19 April 2007, Applicants hereby respectfully submit this Appeal Brief.

REAL PARTIES IN INTEREST

According to an assignment recorded at Reel 017013, Frame 0738, Koninklijke Philips Electronics N.V. owns all of the rights in the above-identified U.S. patent application. However, the under-signed attorney understands that Koninklijle Philips Electronics N.V. has transferred, or is in the process of transferring, certain assets to NXP, B.V., including this patent application.

RELATED APPEALS AND INTERFERENCES

There are no other appeals or interferences related to this application or to any related application, nor will the disposition of this case affect, or be affected by, any other application directly or indirectly.

STATUS OF CLAIMS

Claims 1-20 all stand rejected.

Accordingly, the claims on Appeal are claims 1-20.

STATUS OF AMENDMENTS

There are no pending amendments with respect to this application.

SUMMARY OF CLAIMED SUBJECT MATTER

The present invention is directed to a portable communication device with an automatic operation-keeping system and a method of keeping such a device in operation.

Accordingly, the invention, as broadly recited in claim 1, is drawn to a device comprising: a floating bus (e.g., 214, 215 – page 4, lines 16-17); a power and data system for driving the floating bus, the power and data system comprising a charge pump circuit (e.g., 107, 109, 109b, 110, 301, 317, 320, 103 – page 4, lines 17-19); and at least one switch control circuit (e.g., 402, 411 – page 6, lines 13-27) coupled to the floating bus and the power and data system for facilitating charging of the floating bus and for controlling electromagnetic emission from the device (e.g., page 5, lines 31-32; page 7, lines 11-14).

As broadly recited in claim 5, the invention further features at least one switch control circuit (e.g., 402, 411 – page 6, lines 13-27) being operable in at least a low speed mode and a high speed mode (e.g., page 5, line 33-page 6, line 1), with the mode of the at least one switch control circuit being dependent upon a desired floating bus charging speed (e.g., page 7, lines 5-10).

As broadly recited in claim 7, the invention further features the first switch

control circuit (e.g., 402 – page 6, lines 13-27) and the second switch control circuit (e.g., 411 – page 6, lines 13-27) being driven by a reference circuit (e.g., 421 – page 6, lines 13-27), the reference circuit generating a first reference signal for the first switch control circuit and a second reference signal for the second switch control circuit (e.g., page 7, lines 1-2).

As broadly recited in claim 8, the invention further features, when a voltage across a first terminal (e.g., Vhi) and a second terminal (e.g., Sw) of the first switch control circuit (e.g., 402) is greater than a threshold value, output current from the first switch control circuit is constant at a value dependent on the first reference signal, and when voltage across a first terminal (e.g., Vhi) and a second terminal (e.g., Vhi) of the second switch control circuit (e.g., 411) is greater than the threshold value, output from the second switch control circuit is constant at a value dependent on the second reference signal (e.g., page 6, lines 25-27).

As broadly recited in claim 9, the invention further features the at least one switch control circuit (e.g., 421) controlling electromagnetic emission from the device by constraining the slew rate on the floating bus (e.g., page 7, lines 5-14).

The invention, as broadly recited in claim 10, is drawn to a circuit comprising: a first switch control circuit (e.g., 402– page 6, lines 13-27) for electrical coupling to a high side bus node (e.g., 214) of a floating bus (e.g., 214, 215), and a second switch control circuit (e.g., 411– page 6, lines 13-27) for electrical coupling to a low side bus node (e.g., 215) of the floating bus (e.g., 214, 215), wherein the first switch control circuit and the second switch control circuit comprise complementary circuits (page 2, lines 3-6, 16-18; page 6, lines 9-10, 20-22) for controlling charging of the floating bus by a power and data system; and a reference circuit (e.g., 421 – page 6, lines 13-27) for generating a first reference signal (e.g., Pref) for the first switch control circuit and a second reference signal (e.g., Nref) for the second switch control circuit (e.g., page 2, lines 6-8, 19-20; page 6, lines 17-19; page 7, lines 1-2), wherein the first reference signal and the second reference signal are employed by the first switch control circuit and the second switch control circuit, respectively, for controlling electromagnetic emissions from the floating bus by constraining a slew rate on the floating bus (e.g., page 5, lines 31-32; page 7, lines 5-14).

As broadly recited in claim 13, the invention further features the first switch control circuit (e.g., 402) and the second switch control circuit (e.g., 411) being each operable in at least a low speed mode and a high speed mode (e.g., page 5, line 33-page 6, line 1), with mode of the first switch control circuit and the second switch control circuit being determined by the first reference signal and the second reference signal generated by the reference circuit in response to an input control signal (e.g., HiLo – page 7, lines 5-10) which is dependent upon a desired floating bus charging speed (e.g., page 7, lines 5-10).

The invention, as broadly recited in claim 14, is drawn to a method comprising: tailoring a transfer characteristic of a first switch control circuit (e.g., 402– page 2, lines 13-15; page 6, lines 13-27) to be electrically coupled to a high side bus node (e.g., 214) of a floating bus (e.g., 214, 215 – page 4, lines 16-17), and tailoring a transfer characteristic of a second switch control circuit (e.g., 411– page 2, lines 15-16; page 6, lines 13-27) to be electrically coupled to a low side bus node (e.g., 215) of the floating bus, wherein the first switch control circuit and the second switch control circuit comprise complementary control circuits (page 2, lines 3-6, 16-18; page 6, lines 9-10, 20-22) for controlling charging of the floating bus by a power and data system; and generating, when in use, a first reference signal (PRef) for the first switch control circuit and a second reference signal (NRef) for the second switch control circuit (e.g., page 2, lines 6-8, 19-20; page 6, lines 17-19; page 7, lines 1-2), wherein the first reference signal and the second reference signal are employed by the first switch control circuit and the second switch control circuit, respectively, for controlling electromagnetic emission from the floating bus by constraining a slew rate on the floating bus (e.g., page 5, lines 31-32; page 7, lines 5-14).

As broadly recited in claim 17, the invention further features the first switch control circuit and the second switch control circuit being each operable in at least a low speed mode and a high speed mode (e.g., page 5, line 33-page 6, line 1), with mode of the first switch control circuit and second switch control circuit being determined by the first reference signal and the second reference signal, wherein the first reference signal and the second reference signal are generated by a reference circuit (e.g., 421 – page 6, lines 13-27) electrically coupled to the first switch control

circuit and the second switch control circuit, and wherein the method further comprises providing an input control signal to the reference generator for controlling a value of the first reference signal and a value of the second reference signal (e.g., HiLo – page 7, lines 5-10).

The invention, as broadly recited in claim 18, is drawn to a circuit comprising: means for tailoring a transfer characteristic of a first switch control circuit (e.g., 402– page 2, lines 13-15; page 6, lines 13-27) to be electrically coupled to a high side bus node (e.g., 214) of a floating bus (e.g., 214, 215 – page 4, lines 16-17), and for tailoring a transfer characteristic of a second switch control circuit (e.g., 411– page 2, lines 15-16; page 6, lines 13-27) to be electrically coupled to a low side bus node (e.g., 215) of the floating bus, wherein the first switch control circuit and the second switch control circuit comprise complementary control circuits (page 2, lines 3-6, 16-18; page 6, lines 9-10, 20-22) for controlling charging of the floating bus by a power and data system; and means (e.g., 421 – page 2, lines 6-8, 19-20; page 6, lines 17-19; page 7, lines 1-2) for generating, when in use, a first reference signal (PRef) for the first switch control circuit and a second reference signal (NRef) for the second switch control circuit, wherein the first reference signal and the second reference signal are employed by the first switch control circuit and the second switch control circuit, respectively, for controlling electromagnetic emission from the floating bus by constraining a slew rate on the floating bus (e.g., page 5, lines 31-32; page 7, lines 5-14).

As broadly recited in claim 19, the invention further features the switch control circuit (e.g., 402, 411 – page 6, lines 13-27) including: a switch (e.g., 610 – page 7, lines 32-33) selectively connecting the floating bus to the power and data system; and slew rate adjusting means (e.g., 604, 605, 606, 608, and 612 – page 7, lines 23-32) for adjusting a slew rate of a voltage on the floating bus when the switch connects floating bus to the power and data system.

As broadly recited in claim 20, the invention further features the slew rate adjusting means being responsive to a reference current (e.g., 609), wherein when the reference current has a first value, the slew rate adjusting means adjusts the slew rate of the floating bus to be a first slew rate, and wherein when the reference

current has a second value, the slew rate adjusting means adjusts the slew rate of the floating bus to be a second slew rate greater than the first slew rate (page 7, lines 5-22).

GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

The grounds of rejection to be reviewed on Appeal are: (1) the rejections of claims 1-4, 6-12, 14-16 and 18-20 under 35 U.S.C. § 102(b) over Buhring EP1065600 ("Buhring"); and (2) the rejections of claims 5, 13 and 17 under 35 U.S.C. § 103 over Buhring in view of Yamanaka U.S. patent publication 2002/0154524 ("Yamanaka").

ARGUMENTS

(1) Claims 1-4, 6-12, 14-16 and 18-20 Are All Patentable Over Buhring

Claim 1

Among other things, the device of claim 1 includes at least one switch control circuit coupled to the floating bus and the power and data system for facilitating charging of the floating bus ***and for controlling electromagnetic emission from the device***.

The Examiner argues that in Buhring discloses such a switch control circuit as elements 9, 10, 14, 15 and 20.

Applicants respectfully disagree.

As disclosed in the present application, in a circuit such as that disclosed by Buhring when the switches 9, 10 and 20 close the rate of change of the floating bus voltage is uncontrolled such that the edge of the voltage waveform can be quite sharp, producing a signal spectrum with high harmonic content and unconstrained electromagnetic emissions (EME).

In contrast, the switch control circuit of claim 1 ***controls*** the EME from the device.

It is well established that a rejection under 35 U.S.C. § 102 requires that the prior art reference must teach or suggest **all** of the claim limitations. Furthermore,

M.P.E.P. § 2112 provides that the express, implicit, and inherent disclosures of a prior art reference may be relied upon in the rejection of claims under 35 U.S.C. § 102.

The Examiner argues that Buhring's switch inherently controls EME from the device.

Applicants respectfully disagree. M.P.E.P. § 2112 IV provides that:

> *EXAMINER MUST PROVIDE RATIONALE OR EVIDENCE TENDING TO SHOW INHERENCY*
>
> *The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. In re Rijckaert, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993) (reversed rejection because inherency was based on what would result due to optimization of conditions, not what was necessarily present in the prior art); In re Oelrich, 666 F.2d 578, 581-82, 212 USPQ 323, 326 (CCPA 1981). **"To establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is necessarily present in the thing described in the reference**, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.' " In re Robertson, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999).*

(emphasis added).

Furthermore, a claim rejection must be based on objective evidence of record, and cannot be supported merely on subjective belief and unknown authority. See, e.g., M.P.E.P. § 2144.03; In re Lee, 277 F.3d at 1344-45, 61 USPQ2d at 1434-35

(Fed. Cir. 2002); In re Zerko, 258 F.3d at 1386, 59 USPQ2d at 1697.

No such concrete evidence has been provided by the Examiner here, nor did the Examiner submit an affidavit as required by 37 C.F.R. § 1.104(d)(2) if this proposed motive were based on facts within his personal knowledge (see M.P.E.P. § 2144.03). Applicants respectfully request that such an affidavit be provided if a rejection continues to be made without a citation of any objective evidence.

Meanwhile, Applicants respectfully submit that elements 9, 10, 14, 15 and 20 of Buhring do not control EME from the device. In this regard, it is noted that "control" is commonly understood to mean "*exercise restraint or direction over; hold in check, or curb; or eliminate or prevent the flourishing or spread of.*" Elements 9, 10, 14, 15 and 20 do not "*exercise restraint or direction over; hold in check, or curb; or eliminate or prevent the flourishing or spread of* " EME in Buhring's device.

Therefore, Applicants respectfully submit that Buhring does not disclose the switch control circuit of claim 1, and therefore claim 1 is patentable over the cited prior art.

Accordingly, for at least these reasons, Applicants respectfully submit that claim 1 is patentable over the prior art.

Claims 2-4 and 6-9

Claims 2-4 and 6-9 depend from claim 1 and are deemed patentable over the prior art for at least the reasons set forth above with respect to claim 1, and for the following additional reasons.

Claim 7

Among other things, in the device of claim 7, the first switch control circuit and the second switch control circuit are driven by a reference circuit, the reference circuit generating a first reference signal for the first switch control circuit and a second reference signal for the second switch control circuit.

Applicants respectfully submit that Buhring's device does not include any reference circuit generating any reference signals for any switch control circuits.

A power supply is not a reference circuit, and power supply voltages that may be supplied to switching signal generators 14 and 15 are not "reference ***signals***."

Indeed, they are not ***signals*** at all . . . they are merely supply voltages. There is nothing in either Buhring or the present application, or the understanding of anyone of any skill in the art, at all that could possibly lead one to refer to the supply voltages for switching signal generators 14 and 15 as "reference signals."

Accordingly, for at least this additional reason, Applicants respectfully submit that claim 7 is patentable over the prior art.

Claim 8

Among other things, in the device of claim 8, when a voltage across a first terminal and a second terminal of the first switch control circuit is greater than a ***threshold value***, output current from the first switch control circuit is constant at a value dependent on the first reference signal, and when voltage across a first terminal and a second terminal of the second switch control circuit is greater than the threshold value, output from the second switch control circuit is constant at a value dependent on the second reference signal.

Applicants respectfully submit that Buhring's device does not include any such features.

The Examiner states that "*a threshold value may be any value.*" While this is true, it is also irrelevant, because a threshold value ***must*** be ***some*** value, and the Examiner totally fails to establish that any such value exists!

The Examiner also states that "*clearly the output current is dependent upon the power supply voltage of 14 and 15.*"

Respectfully, no, it is not. Indeed, to the contrary, the output current from the switching devices 9, 10 and 20 is not dependent on the power supply voltage of the switching signal generators 14 and 15. Buhring teaches that the switching signal generators 14 and 15 apply switching signal waveforms to the gates of switching devices 9, 10 and 20 sufficient to turn them on during the data phase. Once the switching devices 9, 10 and 20 are turned on, the voltage across capacitor 6 is transferred to the floating bus. So the current output from switching devices 9, 10 and 20 is not dependent on any power supply voltage applied to the switching signal generators 14 and 15.

Accordingly, for at least these additional reasons, Applicants respectfully submit that claim 8 is patentable over the prior art.

Claim 9

In the device of claim 9, at least one switch control circuit controls electromagnetic emission from the device by ***constraining the slew rate on the floating bus***.

The Examiner states without any citation whatsoever that Buhring's device does this.

No, it does not.

The Examiner also states - again without any citation or support whatsoever – that *"the output current of only one ON transistor of circuit 9 and 20 is less than the output current of both ON transistors of circuit 9 and 20."*

However: the Examiner has not cited anything at all in Buhring that discloses any situation where the transistors of circuits 9 and 20 are both ON at the same time, and more particularly that the resulting combined current would be greater than the current when only circuit 9 is ON. Indeed, Applicants note that Buhring corresponds to U.S. Patent 6,710,626, which clearly teaches in col. 4, lines 52-col. 5, line 8:

> Furthermore, a fifth DMOS transistor **20** is provided, which is of the n-channel type and is connected in parallel with the third DMOS transistor **9**, while its source is coupled to the first line of the CAN databus and its drain is coupled to the first terminal of the capacitance **6**. The gate of this fifth DMOS transistor **20** is controlled by means of the current source **15**, which in the active state of the transmitter actively switches the transistor **10**.
>
> It is achieved by this fifth DMOS transistor **20** that, in the case of a short-circuit of the line **1** (CAN_H) to the reference potential, this line **1** is connectable to the capacitance by means of the fifth transistor **20**. In fact, in such a short-circuit case, the p-channel MOSFET **9** can no longer be turned on because its drain with the line **1** is already connected to ground and would require a negative gate-source voltage in the turned-on state (i.e. with source=drain),

> but in which voltages which are more negative than the reference potential are not available.
>
> For this reason, the redundant n-channel MOSFET **20** is used parallel thereto, which in normal cases can generally not be turned on correctly because CAN_H (its source) conveys a too positive signal in normal cases, but in special short-circuit cases, where CAN-H=0 V, the transistor **20** can be turned on and take over the function of the transistor **9**.

That is device 20 is a redundancy device that turns on when device 9 cannot turn on.

So Applicants traverse the Examiner's suppositions and speculations regarding Buhring's operation.

Furthermore, in any event a claim rejection must be based on objective evidence of record, and cannot be supported merely on subjective belief and unknown authority. See, e.g., M.P.E.P. § 2144.03; In re Lee, 277 F.3d at 1344-45, 61 USPQ2d at 1434-35 (Fed. Cir. 2002); In re Zerko, 258 F.3d at 1386, 59 USPQ2d at 1697.

No such concrete evidence has been provided by the Examiner here, nor did the Examiner submit an affidavit as required by 37 C.F.R. § 1.104(d)(2) if this proposed motive were based on facts within his personal knowledge (see M.P.E.P. § 2144.03). Applicants respectfully request that such an affidavit be provided if a rejection continues to be made without a citation of any objective evidence.

Claim 10

Among other things, the circuit of claim 10 includes a reference circuit for generating a first reference signal for the first switch control circuit and a second reference signal for the second switch control circuit, wherein the first reference signal and the second reference signal are employed by the first switch control circuit and the second switch control circuit, respectively, for controlling electromagnetic emissions from the floating bus by constraining a slew rate on the floating bus.

As explained above with respect to claim 1, the switch control circuits of Buhring do not control electromagnetic emissions. As explained above with respect

to claim 7, Buhring's device does not include any reference circuit generating any reference signals for any switch control circuits. As explained above with respect to claim 9, Buhring's device does not constrain the slew rate on the floating bus.

Accordingly, for at least these reasons, Applicants respectfully submit that claim 10 is patentable over Buhring.

Claims 11-12

Claims 11-12 depend from claim 10 and are deemed patentable over the prior art for at least the reasons set forth above with respect to claim 10.

Claim 14

Among other things, the method of claim 14 includes generating, when in use, a first reference signal (PRef) for the first switch control circuit and a second reference signal (NRef) for the second switch control circuit, wherein the first reference signal and the second reference signal are employed by the first switch control circuit and the second switch control circuit, respectively, for controlling electromagnetic emission from the floating bus by constraining a slew rate on the floating bus.

As explained above with respect to claim 1, the switch control circuits of Buhring do not control electromagnetic emissions. As explained above with respect to claim 7, Buhring's device does not include any reference circuit generating any reference signals for any switch control circuits. As explained above with respect to claim 9, Buhring's device does not constrain the slew rate on the floating bus.

Accordingly, for at least these reasons, Applicants respectfully submit that claim 14 is patentable over Buhring.

Claims 15-16

Claims 15-16 depend from claim 14 and are deemed patentable over the prior art for at least the reasons set forth above with respect to claim 14.

Claim 18

Among other things, the circuit of claim 18 includes means for generating, when in use, a first reference signal (PRef) for the first switch control circuit and a second reference signal (NRef) for the second switch control circuit, wherein the first reference signal and the second reference signal are employed by the first switch

control circuit and the second switch control circuit, respectively, for controlling electromagnetic emission from the floating bus by constraining a slew rate on the floating bus. As explained above with respect to claim 7, Buhring's device does not include any reference circuit generating any reference signals for any switch control circuits. As explained above with respect to claim 9, Buhring's device does not constrain the slew rate on the floating bus.

Accordingly, for at least these reasons, Applicants respectfully submit that claim 18 is patentable over Buhring.

Claim 19

In the device of claim 1, the switch control circuit includes a switch selectively connecting the floating bus to the power and data system; and slew rate adjusting means for adjusting a slew rate of a voltage on the floating bus when the switch connects floating bus to the power and data system.

The Examiner argues that device 20 in Buhring corresponds to the slew rate adjusting means for adjusting a slew rate of a voltage on the floating bus when the switch connects floating bus to the power and data system.

However as explained above, device 20 is a redundancy device and therefore is connected when device 9 cannot be connected. Therefore, device 20 cannot and does not adjust a slew rate of a voltage on the floating bus when device 9 connects floating bus to the power and data system.

Accordingly, for at least these additional reasons, Applicants respectfully submit that claim 19 is patentable over the cited prior art.

Claim 20

Among other things, in the device of claim 20 the slew rate adjusting means is responsive to a reference current, wherein when the reference current has a first value, the slew rate adjusting means adjusts the slew rate of the floating bus to be a first slew rate, and wherein when the reference current has a second value, the slew rate adjusting means adjusts the slew rate of the floating bus to be a second slew rate greater than the first slew rate.

The Examiner fails to explain how device 20 in Buhring adjusts the slew rate of the floating bus to be a first slew rate when it is turned OFF and has no effect at all

on the bus . . .it is as if it does not even exist.

Accordingly, for at least these additional reasons, Applicants respectfully submit that claim 20 is patentable over the cited prior art.

(2) Claims 5, 13 and 17 Are All Patentable Over Buhring & Yamanaka

Claim 5

Claim 5 depends from claim 1. Yamanaka does not remedy the shortcomings of Buhring as set forth above with respect to claim 1. Accordingly, claim 5 is patentable over any possible combination of Buhring and Yamanaka for at least the reasons set forth above with respect to claim 1, and for the following additional reasons.

Among other things, in the device of claim 5 at least one switch control circuit is operable in at least a low speed mode and a high speed mode, *with mode of the at least one switch control circuit being dependent upon a desired* ***floating bus*** *charging speed*.

The Examiner fairly admits that Buhring fails to disclose such features. However, the Examiner states that Yamanaka discloses a voltage detecting circuit for controlling the speed of some switches in order to reduce rush current, and further that it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Buhring to incorporate Yamanaka's teaching to control the switches' speed in order to reduce rush current.

Applicants respectfully disagree.

At the outset, Yamanaka does not operate in any modes that are dependent upon a desired floating bus charging speed. Yamanaka does not even have a floating bus! Yamanaka pertains only to ground referenced charge transfer devices. So it is not possible for Yamanaka to disclose operation in any modes that are dependent upon a desired floating bus charging speed. Since it is admitted that Buhring also does not disclose this feature, no combination of Buhring and Yamanaka could ever produce a device such as the device of claim 5 that is operable in at least a low speed mode and a high speed mode, with mode of the at

least one switch control circuit being dependent upon a desired floating bus charging speed.

Furthermore, the Examiner does not cite anything in Yamanaka that teaches that any modes are *dependent upon a desired floating bus charging speed*. Indeed, modes are automatically changed in Yamanaka's devices in order to prevent rush current from dropping a power supply voltage too much at start-up, and are not dependent upon any desired charging speed.

So again, no possible combination of Buhring and Yamanaka could ever produce the device of claim 5.

Also, Applicants respectfully traverse the proposed modification of Buhring as lacking any motivation in the prior art.

In Yamanaka, a charge pump supplies voltage from a power supply to a capacitor connected to ground, and Yamanaka's charge pump rush current limiting circuit operates to prevent rush current from dropping a power supply voltage too much at start-up to prevent malfunction of other circuits connected to the supply voltage.

However, Buhring does not supply voltage from a power supply to a capacitor connected to ground to generate any rush current that could cause a supply voltage to drop too low.

Therefore, there could be no motivation to modify Buhring's device.

Accordingly, for at least these additional reasons, claim 5 is deemed patentable over the cited prior art.

Claim 13

Claim 13 depends from claim 10. Yamanaka does not remedy the shortcomings of Buhring as set forth above with respect to claim 10. Accordingly, claim 13 is patentable over any possible combination of Buhring and Yamanaka for at least the reasons set forth above with respect to claim 10, and for the following additional reasons.

Among other things, in the circuit of claim 13 the first switch control circuit and the second switch control circuit are each operable in at least a low speed mode and a high speed mode, with mode of the first switch control circuit and the second

switch control circuit being determined by the first reference signal and the second reference signal generated by the reference circuit in response to an input control signal which is dependent upon a desired floating bus charging speed.

The Examiner fairly admits that Buhring fails to disclose such features. However, the Examiner states that Yamanaka discloses a voltage detecting circuit for controlling the speed of some switches in order to reduce rush current, and further that it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Buhring to incorporate Yamanaka's teaching to control the switches' speed in order to reduce rush current.

For the reasons set forth above with respect to claim 5, Applicants respectfully disagree, and also respectfully traverse the proposed modification of Buhring as lacking any motivation in the prior art.

Furthermore, the Examiner fails to mention the features of claim 13 wherein the mode of the first switch control circuit and the second switch control circuit are determined by the first reference signal and the second reference signal generated by the reference circuit in response to an input control signal.

Applicants respectfully submit that no combination of Buhring and Yamanaka could produce a circuit with such features. In that regard, Applicants also note that the Examiner has already argued that the first and second reference signals are supply voltages, and of course such supply voltages cannot determine a low speed or high speed mode of a circuit like Buhring's.

Accordingly, for at least these additional reasons, claim 13 is deemed patentable over the cited prior art.

Claim 17

Claim 17 depends from claim 14. Yamanaka does not remedy the shortcomings of Buhring as set forth above with respect to claim 14. Accordingly, claim 17 is patentable over any possible combination of Buhring and Yamanaka for at least the reasons set forth above with respect to claim 10, and for the following additional reasons.

Among other things, in the method of claim 17 the first switch control circuit and the second switch control circuit are each operable in at least a low speed mode

and a high speed mode, with mode of the first switch control circuit and second switch control circuit being determined by the first reference signal and the second reference signal, wherein the first reference signal and the second reference signal are generated by a reference circuit electrically coupled to the first switch control circuit and the second switch control circuit, and wherein the method further comprises providing an input control signal to the reference generator for controlling a value of the first reference signal and a value of the second reference signal.

The Examiner fairly admits that Buhring fails to disclose such features. However, the Examiner states that Yamanaka discloses a voltage detecting circuit for controlling the speed of some switches in order to reduce rush current, and further that it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Buhring to incorporate Yamanaka's teaching to control the switches' speed in order to reduce rush current.

For the reasons set forth above with respect to claim 5, Applicants respectfully disagree, and also respectfully traverse the proposed modification of Buhring as lacking any motivation in the prior art.

Furthermore, the Examiner fails to mention the features of claim 17 wherein the first reference signal and the second reference signal are generated by a reference circuit electrically coupled to the first switch control circuit and the second switch control circuit, and wherein the method further comprises providing an input control signal to the reference generator for controlling a value of the first reference signal and a value of the second reference signal.

Applicants respectfully submit that no combination of Buhring and Yamanaka could produce a circuit with such features. In that regard, Applicants also note that the Examiner has already argued that the first and second reference signals are supply voltages, and of course there is no input control signal provided to a reference generator for controlling a value of power supply voltages in Buhring.

Accordingly, for at least these additional reasons, claim 17 is deemed patentable over the cited prior art.

CONCLUSION

For all of the foregoing reasons, Applicants submit that claims 1-20 are all patentable over the cited prior art. Therefore, Applicants respectfully request that the rejections of claims 1-20 be withdrawn, the claims be allowed, and the application be passed to issue.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 50-0238 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17, particularly extension of time fees, and any fees under 37 C.F.R. § 41.20, and specifically any additional fee required for filing this Appeal Brief.

Respectfully submitted,

VOLENTINE & WHITT

Date: 19 June 2007

By: _____
Kenneth D. Springer
Registration No. 39,843

VOLENTINE & WHITT
One Freedom Square
11951 Freedom Drive, Suite 1260
Reston, Virginia 20190
Telephone No.: (571) 283-0724
Facsimile No.: (571) 283-0740

CLAIMS APPENDIX

1. (Previously Presented) A device comprising: a floating bus; a power and data system for driving the floating bus, the power and data system comprising a charge pump circuit; and at least one switch control circuit coupled to the floating bus and the power and data system for facilitating charging of the floating bus and for controlling electromagnetic emission from the device.

2. (Previously Presented) The device of claim 1, wherein the at least one switch control circuit comprises a first switch control circuit and a second switch control circuit, the first switch control circuit comprising at least one P type transistor circuit, and the second switch control circuit comprising at least one N type transistor circuit and wherein the first switch control circuit and the second switch control circuit comprise complementary circuits.

3. (Previously Presented) The device of claim 2, wherein the first switch control circuit is electrically connected to a first bus node of the floating bus and the second switch control circuit is electrically connected to a second bus node of the floating bus.

4. (Previously Presented) The device of claim 1, wherein the charge pump circuit comprises an integrated circuit employing at least one transistor and diode pair.

5. (Previously Presented) The device of claim 1, wherein the at least one switch control circuit is operable in at least a low speed mode and a high speed mode, with mode of the at least one switch control circuit being dependent upon a desired floating bus charging speed.

6. (Previously Presented) The device of claim 1, wherein the floating bus comprises a balanced bus system having a high side bus node and a low side bus node, and wherein the at least one switch control circuit comprises a first switch control circuit and a first diode connected to the high side bus node and a second switch control circuit and a second diode connected to the low side bus node.

7. (Previously Presented) The device of claim 6, wherein the first switch control circuit and the second switch control circuit are driven by a reference circuit, the reference circuit generating a first reference signal for the first switch control circuit and a second reference signal for the second switch control circuit.

8. (Original) The device of claim 7, wherein when a voltage across a first terminal and a second terminal of the first switch control circuit is greater than a threshold value, output current from the first switch control circuit is constant at a value dependent on the first reference signal, and when voltage across a first terminal and a second terminal of the second switch control circuit is greater than the threshold value, output from the second switch control circuit is constant at a value dependent on the second reference signal.

9. (Original) The device of claim 1, wherein the at least one switch control circuit controls electromagnetic emission from the device by constraining the slew rate on the floating bus.

10. (Previously Presented) A circuit comprising: a first switch control circuit for electrical coupling to a high side bus node of a floating bus, and a second switch control circuit for electrical coupling to a low side bus node of the floating bus, wherein the first switch control circuit and the second control circuit comprise complementary circuits for controlling charging of the floating bus by a power and data system; and a reference circuit for generating a first reference signal for the first switch control circuit and a second reference signal for the second switch control circuit, wherein the first reference signal and the second reference signal are

employed by the first switch control circuit and the second switch control circuit, respectively, for controlling electromagnetic emissions from the floating bus by constraining a slew rate on the floating bus.

11. (Previously Presented) The circuit of claim 10, wherein the power and data system comprises a charge pump circuit, the charge pump circuit comprising an integrated circuit.

12. (Previously Presented) The circuit of claim 10, wherein the first switch control circuit comprises a P type transistor circuit, and the second switch control circuit comprises a complementary N type transistor circuit.

13. (Previously Presented) The circuit of claim 10, wherein the first switch control circuit and the second switch control circuit are each operable in at least a low speed mode and a high speed mode, with mode of the first switch control circuit and the second switch control circuit being determined by the first reference signal and the second reference signal generated by the reference circuit in response to an input control signal which is dependent upon a desired floating bus charging speed.

14. (Previously Presented) A method comprising: tailoring a transfer characteristic of a first switch control circuit to be electrically coupled to a high side bus node of a floating bus, and tailoring a transfer characteristic of a second switch control circuit to be electrically coupled to a low side bus node of the floating bus, wherein the first switch control circuit and the second switch control circuit comprise complementary control circuits for controlling charging of the floating bus by a power and data system; and generating, when in use, a first reference signal (PRef) for the first switch control circuit and a second reference signal (NRef) for the second switch control circuit, wherein the first reference signal and the second reference signal are employed by the first switch control circuit and the second switch control circuit, respectively, for controlling electromagnetic emission from the floating bus by constraining a slew rate on the floating bus.

15. (Previously Presented) The method of claim 14, wherein the power and data system comprises a charge pump circuit, the charge pump circuit comprising an integrated circuit.

16. (Previously Presented) The method of claim 15, further comprising integrating the first switch control circuit and the second switch control circuit on the integrated circuit with the charge pump circuit.

17. (Previously Presented) The method of claim 14, wherein the first switch control circuit and the second switch control circuit are each operable in at least a low speed mode and a high speed mode, with mode of the first switch control circuit and second switch control circuit being determined by the first reference signal and the second reference signal, wherein the first reference signal and the second reference signal are generated by a reference circuit electrically coupled to the first switch control circuit and the second switch control circuit, and wherein the method further comprises providing an input control signal to the reference generator for controlling a value of the first reference signal and a value of the second reference signal.

18. (Previously Presented) A circuit comprising: means for tailoring a transfer characteristic of a first switch control circuit to be electrically coupled to a high side bus node of a floating bus, and for tailoring a transfer characteristic of a second switch control circuit to be electrically coupled to a low side bus node of the floating bus, wherein the first switch control circuit and the second switch control circuit comprise complementary control circuits for controlling charging of the floating bus by a power and data system; and means for generating, when in use, a first reference signal (PRef) for the first switch control circuit and a second reference signal (NRef) for the second switch control circuit, wherein the first reference signal and the second reference signal are employed by the first switch control circuit and

the second switch control circuit, respectively, for controlling electromagnetic emission from the floating bus by constraining a slew rate on the floating bus.

19. (Previously Presented) The device of claim 1, wherein the switch control circuit includes:

a switch selectively connecting the floating bus to the power and data system; and

slew rate adjusting means for adjusting a slew rate of a voltage on the floating bus when the switch connects floating bus to the power and data system.

20. (Previously Presented) The device of claim 19, wherein the slew rate adjusting means is responsive to a reference current, wherein when the reference current has a first value, the slew rate adjusting means adjusts the slew rate of the floating bus to be a first slew rate, and wherein when the reference current has a second value, the slew rate adjusting means adjusts the slew rate of the floating bus to be a second slew rate greater than the first slew rate.

EVIDENCE APPENDIX

{None}

RELATED PROCEEEDINGS APPENDIX

{None}